NEW LEPIDOPTERA FROM BRITISH COLUMBIA.

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NOCTUIDÆ.

Cænurgia erechtea Cram. form **parva** form. nov.

This form is the spring brood of *erechtea* and is distinguished from the typical or summer form by its uniformly smaller size, measuring 35 mm. in alar expanse as compared with 42 mm. in typical *erechtea*.

The colours and markings of both male and female are exactly the same as in *erechtea* but, of course, on a reduced scale. It flies in April and May, while *erechtea* is not on the wing until July and August.

Described from 10 specimens, 6 ♂'s and 4 ♀'s collected by the author.

Holotype.—♂, Victoria, B. C., April 29th, 1913.

Allotype.—♀, Victoria, B. C., April 22nd, 1912.

Paratypes.—5 ♂'s, Victoria, B. C., April 22nd, May 4th, 6th, 13th, 1913, April 22nd, 1917; 3 ♀'s, Victoria, B. C., April 18th, May 4th, 1913, May 13th, 1917.

Types and paratypes in author's collection.

LASIOCAMPIDÆ.

Tolype dayi, n. sp.

Male.—Palpi seal brown tipped with white; front seal brown; thorax slate-grey shading into pale grey on metathorax, with the usual brown crest of raised scales; abdomen dark slate-grey shading into lighter grey laterally. Primaries light grey with median and sub-terminal spaces dark grey; maculation very close to *velleda*, but differs in the course of the outer edge of the median space, which is more sinuate in the new species.

The sub-terminal space is much narrower in *dayi* than it is in *velleda* and is of a more even width throughout. Terminal line white; fringe grey, paler externally. Secondaries, basal area smoky; median band paler followed by a sub-terminal smoky band which is produced into an angle at vein 4.

Underneath much as above but paler and the maculation less distinct.

Female.—Front and thorax chalk white in contradistinction to the yellowish white of *velleda* Stoll, and *lowriei* B. & McD.; abdomen banded with dark and light grey and densely clothed with longish white hairs. Primaries very much paler than the male, and all the veins outlined in white.

In this sex there is a tendency in the dark grey sub-terminal space to become obsolete outwardly from vein 6 to inner margin, thus giving the lower half of the s. t. space the appearance of a narrow, dark band.

Secondaries same as in the male but much paler.

Expanse.—Male 34–35 mm. Female 41–42 mm.

Described from two males and five females all taken on Vancouver Island.

Holotype.—♀, Quamichan Lake, near Duncan, B. C., Sept. 3rd, 1915, G. O. Day, and in the collection of the author, through Mr. Day's kindness.

Allotype.—♂, Sluggett, V. I., Sept. 18th, 1916, W. Downes, and in the collection of the author, through the kindness of the captor.

Paratypes.—One male, Victoria, B. C., Sept. 1st, 1916, taken by the author and in his collection; 3 females, Quamichan Lake, V. I., Sept. 13th, 1906, Sept.

13, 1911, and Sept. 20th, 1914, G. O. Day, and in his collection; 1 female, Sluggett, V. I., Sept. 24th, 1916, W. Downes, and in his collection.

The last-named is somewhat damaged, being broken on inner margin of primaries.

The females vary in depth of colouring on primaries, one of the Quamichan Lake females being very dark, giving the insect a rather slaty-grey appearance.

I take much pleasure in naming this species after my friend Mr. G. O. Day, who has done much good work in describing the life-histories of many of our western species.

The following notes, given to me by Mr. Day, on the egg and cocoon of this species are of interest.

Egg.—"A female found at rest on Sept. 3rd, 1915, extruded 5 eggs when in the killing tin. The eggs were of a dark olive green, joined together end to end, and thinly covered with hairs from the tail of the parent moth. The hairs appeared to be fastened on by the sticky surface of the egg itself—sideways and irregularly. The surface of the eggs were pitted all over. The eggs were evidently infertile as they became concave on one side after a few days."

Cocoon.—"On a former occasion a cocoon was found on an old fence post, a small cavity having been made by the larva and covered by a tough web composed of silk and fragments of excavated wood. The cocoon resembled a blister on the post."

GEOMETRIDÆ.

Eustroma nubilata Pack. form **macdunnoughi,** form. nov.

This form differs from typical *nubilata* in having the ante- and post-median bands and the terminal area on the primaries wholly suffused with dark brown, which is only a degree lighter than the very dark median band. The extra-discal line is faintly shown as a narrow, white line which is more pronounced costally, while the crenulate s. t. line is also picked out in white.

The secondaries in the male have the basal area whitish, shading into dark fuscous from the extra-discal line outwardly, becoming deeper towards the margin, while in the female they are wholly suffused with brown, the suffusion being somewhat paler basally. It flies with typical *nubilata* and although not common, it occurs regularly every season. Named in honour of Dr. J. H. McDunnough, to whom I am deeply indebted for his kindly help and advice in my efforts to straighten out our British Columbia Lepidoptera.

Altar expanse.—Male 30–32 mm. Female 33–36 mm.

Described from 12 specimens, 8 males and 4 females, taken on Vancouver Island and the Lower Fraser Valley.

Holotype.—♂, Rosedale, B. C., June 19th, 1917, taken by the author and in his collection.

Allotype.—♀, Rosedale, B. C., June 23rd, 1917, taken by the author and in his collection.

Paratypes.—4 ♂'s, Goldstream, B. C., May 18th, 1915; Vancouver, B. C., June 18th, 1917; Rosedale, B. C., June 23rd, 27th, 1917, taken by the author and in his collection; 1 ♂, Vancouver, B. C., May 7th, 1905, R. V. Harvey, and now in the author's collection; 1 ♂, Chilliwack, B. C., June 26th, 1918, W. B. Anderson, and in his collection; 1 ♂, Fraser Mills, B. C., July 20th, 1920,

L. E. Marmont, and in his collection; 2 ♀'s, Rosedale, B. C., June 24th, 1917, Cloverdale, B. C., June 15th, 1917, taken by the author and in his collection; 1 ♀, Duncan, B. C., June 28th, 1895, E. M. Skinner, and now in the author's collection.

Dysstroma sobria Swett. form **swetti.**, form. nov.

In the Can. Ent., Feb., 1917, p. 64 et seq., Mr. L. W. Swett gave a paper on the genus *Dysstroma*, in the course of which he described some new abberations, or, as I would prefer to call them, forms of our large Vancouver Island species, which he had at that time identified as *mulleolata* Hulst.

There has been considerable doubt as to what Hulst's *mulleolata* really is, Mr. L. B. Prout, of London, Eng., being the first one, I believe, to associate this large form with *mulleolata* (vide Trans. Lon. Ent. Socy., 1908, p. 38). Drs. Barnes & McDunnough in further notes on this genus (Cont. Lep. No. Amer., Vol. 3, No. 4, March, 1917, p. 228), accepted Mr. Swett's identification of *mulleolata*, although with a certain amount of reserve, as there were several discrepancies between Hulst's type and his description. Later, (ibid., Vol. IV, No. 2, May, 1918, p. 137) on an examination of the type specimen by Dr. McDunnough, the authors came to the conclusion, for reasons which are clearly set forth and which seem exceedingly logical, that Hulst's *mulleolata* is the smaller, white-banded form of *citrata* L, which Mr. Swett had previously called *punctum-notata* Haw. This is the form which in favourable years is very common on Vancouver Island in the month of August.

Accepting Barnes' & McDunnough's identification of *mulleolata* to be correct, (and with which I fully agree) will leave our large, white-banded form without a name. According to the rules of the International Code, the first-named form ,i. e., *sobria*, given by Mr. Swett, will stand for the group collectively, and I propose to give the name *swetti* to the white-banded form, a description of which follows·

Head, front and palpi, cinnamon brown, thorax the same, intermingled with a few lighter hairs. Primaries, basal area dark brown, followed by another white line, slightly sinuous. The central area is white, irregularly bordered with black anteriorly and posteriorly, the posterior portion being wider and more pronounced costally. The amount of white in the central area is somewhat variable, especially between the sexes, the females as a general rule having a much larger proportion of white than the males. The outer border of central area is edged narrowly with white, while contained within the white area is a black linear discal mark. The subterminal area is tawny, shading into dark brown, especially opposite the discal mark, where it appears as a dark diffused blotch. The s. t. line is white, dentate, and rather faint. There is a small, yellowish-white sub-apical mark on the costa. Fringe pale, darker at the termination of the veins.

Secondaries, dark fuscous with the extra-discal line distinctly outlined in a paler shade and being acutely angled between veins 3 and 4. Black discal dots small but distinct.

Underneath primaries dark fuscous with central area showing through darker, a large yellowish patch on costa. Secondaries same colour with extra- and intra-discal lines strongly marked. Discal spots reproduced on all wings

but those on secondaries larger and more prominent. Alar expanse—males, 35–37 mm., females 38–40 mm.+

I take great pleasure in naming this form after Mr. L. W. Swett, who has done a great deal of pioneer work in this group, and to whom I owe much of my present knowledge of the Geometridæ.

Described from five males and five females, all taken by the author at Victoria, B. C.

Holotype.—♂, Victoria, B. C., June 20th, 1914.

Alloiype.—♀, Victoria, B. C., May 22nd, 1915.

Paratypes.—4 males, Victoria, B. C., June 22nd, 1914, June 24th, 1915, July 17th and 22nd, 1920; 4 females, Victoria, B. C., June 16th, 1914, June 24th and 26th, 1915, July 17th, 1920.

Types and paratypes in the collection of the author.

It is easily distinguished from *mulleolata* on account of its larger size, its ruddier appearance, and the shape of the extra-discal line on secondaries. Also by the fact that normally *swetti* flies in June, while *mulleolata* makes its appearance in August.

This year, being an abnormally late year, *swetti* did not apparently emerge until the beginning of July, as the specimens that I took on the 17th and 22nd of that month were a little worn and had been on the wing for at least a couple of weeks.

The list of species in this particular section of the genus *Dysstroma* will now stand as follows:—

Dysstroma

citrata Linn.

form *immanata* Haw.

mulleolata Hulst = *punctum-notata* Swett. (nec Haw.).

sobria Swett.

form *subumbrata* Swett.

form *ochrofuscaria* Swett.

form *swetti* Blackmore = *mulleolata* Swett. (nec Hulst).

I do not think that *mulleolata* will prove to be a valid species, but will eventually turn out to be a form of *citrata:* for the present, however, it will be better to leave it as it stands until the life-histories of the various *citrata* forms can be worked out.

Eulype albodecorata, nov. sp.

This new species is very closely allied to *hastata* L., and had perhaps better be described in a comparison with that well-known species.

Palpi, head, thorax and abdomen as in *hastata*. Primaries, basal area black, followed by a narrow white basal line, which is gently curved from costa to inner margin. Sub-basal band black and wider, similarly curved. An irregular ante-median band, white, and about the same width as sub-basal. The broad black median band so characteristic of typical *hastata* is in this species broken up and considerably intermingled with white. Post-median white band rather narrower than in *hastata*, especially costally, with black spots on the veins. The spots vary in number; in some specimens there is a spot on each

vein, while others have spots on only two or three veins. Terminal area and sagittate mark as in *hastata*.

Secondaries.—It is on these that the most striking difference occurs, the large black basal area of *hastata* giving place to a small, dusky basal patch, the rest of the wing, nearly to the outer margin, being clear white, with the exception of a narrow, irregular, broken, black, post-median band which is more pronounced in the holotype than in most of the other specimens. The black outer margin is slightly narrower than in *hastata*. Underneath, all the markings of the upper side are reproduced in detail. Another slight difference which appears fairly constant is in the fringe of the primaries, which in *hastata* is regularly and evenly black and white checkered, but in *albodecorata* it is quite black from the apex to the sagittate mark, below which it becomes as in *hastata*.

Alar expanse 31–34 mm.

Described from 28 specimens, 14 ♂'s and 14 ♀'s taken by the author at Goldstream, B. C.

Holotype.—♂, Goldstream, B. C., June 7th, 1916.

Allotype.—♀, Goldstream, B. C., May 18th, 1915.

Paratypes.—13 ♂'s, Goldstream, B. C., May 8th, 20th, 1915; June 11th, 1913; June 3rd, 1915; June 6th, 7th, 8th, 1916; 13 ♀'s, Goldstream, B. C., May 8th, 1915; June 3rd, 1915; June 6th, 7th, 9th, 1916; July 4th, 6th, 1916.

Types and paratypes in the author's collection.+

At first I thought this new species was a white form of *hastata*, but having had both species under observation for several years, I came to the conclusion that they were distinct.

In the first place, *albodecorata* is on the wing from a week to ten days earlier than *hastata*, although the date of appearance depends upon the season. During the years 1915-16 and '17 I gave special attention to the dates of their appearance, and although the season varied in each of those three years (1915 being an especially early year) *hastata* never put in an appearance until the new species had been flying for at least a week. Secondly, although both species are subject to a certain amount of variation within certain limits, I have never known them to intergrade and when one is acquainted with both species, it is comparatively easy to sort them out by their general habitus.

PYRALIDÆ.

Herculia florencealis, nov. sp.

Palpi deep yellow with a few scattered red and black scales exteriorly. Face and head light fawn, thorax a darker shade of same colour. Antennæ fawn, but the scales on each segment are dark tipped, giving them an annulated appearance. Abdomen deep cream colour, each segment ringed with dark brown, posteriorly. Primaries, basal area fawn colour, with a few scattered black scales which are accentuated along the costal region, central area a wide brown band with its interior edge strongly dentate from costa to inner margin; the exterior edge extends obliquely outward from costa to veing b, thence curving gently inward to inner margin and being finely crenate.

On the costal margin of this band are five small sub-quadrate yellow patches. Bordering the wide median band is a narrow yellow streak beginning at costa where it is widest and extending to vein 6 where it becomes obsolete. The